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Patterson & Sheridan, LLP
24 Greenway Plaza, Suite 1600
Houston, TX 77046

EXAMINER

ZHANG, HAIDONG

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KARLA K. ARNDT, JAMES M. CAFFREY,
KEYUR PATEL and ASPEN L. PAYTON

Appeal 2017-007142
Application 13/026,351
Technology Center 2800

Before TERRY J. OWENS, BEVERLY A. FRANKLIN, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 8–21. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a system and computer-readable storage medium for monitoring a performance metric. Claim 8 is illustrative:

8. A non-transitory computer-readable storage medium storing an application, which, when executed on a processor, performs an operation for monitoring a performance metric, the operation comprising:
 - determining a value of a performance metric for a current sampling period;

upon determining the value of the performance metric determined for the current sampling period passes a first threshold derived from a first model of expected behavior of the performance metric, evaluating the value of the performance metric determined for the current sampling period according to a second model of expected behavior of the performance metric; and

upon determining the value of the performance metric determined for the current sampling period passes a threshold derived from the second model, generating an alert message.

The References

Kolsrud	US 3,795,008	Feb. 26, 1974
McGee	US 2003/0079160 A1	Apr. 24, 2003
Breitgand	US 2006/0293777 A1	Dec. 28, 2006
Cohen	US 2007/0083513 A1	Apr. 12, 2007

The Rejections

The claims stand rejected as follows: claims 8–14 provisionally on the ground of nonstatutory obviousness-type double patenting over claims 1–7 of copending Application No. 13/686,389, claims 15–21 provisionally on the ground of nonstatutory obviousness-type double patenting over claims 1–7 of copending Application No. 13/686,389 in view of Breitgand, claims 8 and 15 under 35 U.S.C. § 103 over Breitgand in view of McGee, claims 8–10, 12–15, 17 and 19–21 under 35 U.S.C. § 103 over Breitgand in view of Cohen, and claims 11 and 18 under 35 U.S.C. § 103 over Breitgand in view of Cohen and Kolsrud.

OPINION

We affirm the provisional obviousness-type double patenting rejections, reverse the rejections under 35 U.S.C. § 103, and under 37 C.F.R. § 41.50(b) enter a new ground of rejection.

Provisional obviousness-type double patenting rejections

The Appellants do not challenge the provisional obviousness-type double patenting rejections (Br. 7). We therefore summarily affirm those rejections.

Rejection over Breitgand in view of McGee

Breitgand discloses “methods and systems for automated and adaptive setting of system component performance thresholds” (¶ 2). In one embodiment Breitgand obtains a best-fit quadratic polynomial curve (98) for application metric versus component performance metric data (94), selects a subset of the data whose component performance metric values fall within a filtering interval (d), and calculates an updated service level objective (SLO) threshold value (a horizontal line (96) above which application metric values correspond to an SLO violation and below which application metric values correspond to normal system behavior) (¶¶ 50, 110, 111; Fig. 7). In an alternative threshold-setting method Breitgand constructs an application metric (ρ) versus component performance metric (μ) plot having a horizontal SLO application metric threshold and a vertical component performance metric threshold (γ) such that the plot is divided into four quadrants, where values in the lower left quadrant (104) satisfy both thresholds (i.e., are true negative events), values in the upper right quadrant (106) violate both thresholds (i.e., are true positive events), and values in the other quadrants satisfy one threshold but violate the other threshold (i.e., are false positive or false negative events) (¶ 112; Fig. 8). A threshold management “unit searches for the location of line **102** that maximizes the number of data points in quadrants **104** and **106**, and minimizes the number of data points in the remaining quadrants” (¶ 113).

McGee determines whether metric sample subgroup data fits a normal distribution or is normalizable, and if not, calculates upper and lower threshold limits for the mean based on the quantile function of the subgroup means, augmented with a linear regression-based estimate of the rate of change of the metric (¶¶ 102, 111, 181, 211; Fig. 7). “The mean and standard deviation are compared to the upper and lower limits for the mean and standard deviation for each subgroup. If the mean or standard deviation of any of the subgroups falls outside the limits, notification of a threshold violation is sent to alarm manager **206**” (¶ 225; Fig. 12).

The Examiner concludes, in reliance upon McGee’s paragraph 55, that McGee would have suggested modifying Breitgand’s threshold management unit such that it meets the requirement in the Appellants’ claims 8 and 15 of “upon determining the value of the performance metric determined for the current sampling period passes a first threshold derived from a first model of expected behavior of the performance metric, evaluating the value of performance metric determined for the current sampling period according to a second model of expected behavior of the performance metric; and upon determining the value of the performance metric determined for the current sampling period passes a threshold derived from the second model, generating an alert message” (Final Act. 11–12).

McGee’s paragraph 55 is as follows:

Dynamic threshold testing component **114** detects when individual metrics are in abnormal condition, producing threshold alarm events. It uses both fixed, user-established thresholds and thresholds derived from a statistical analysis of the metric itself. Dynamic threshold testing component **114** includes a fixed threshold check module, a dynamic threshold check module, and a dynamic threshold computation module,

as will be discussed in detail below in the section entitled
“Adaptive Threshold Determination.”

The Examiner does not explain, and it is not apparent, how that disclosure would have suggested, to one of ordinary skill in the art, modifying Breitgand as proposed by the Examiner.

The Examiner finds that McGee’s abstract, paragraph 230 and figures 7 and 13 disclose the above-stated requirements of the Appellants’ claims 8 and 15 (Ans. 6–9).

The Examiner sets forth McGee’s paragraph 230’s disclosure, part of McGee’s figure 7, and an annotated version of McGee’s figure 13, but does not establish that those portions of McGee disclose the above-stated requirements of the Appellants’ claims 8 and 15.

The Examiner finds that Breitgand’s figure 7’s filtering interval (100) corresponds to Breitgand’s figure 8’s component threshold (γ) (Ans. 4–6).

Breitgand’s component performance metric filtering interval (100) and component performance metric threshold (γ) differ and have different functions in different embodiments. In one embodiment the filtering interval (100) defines a range of component performance metric data used in a quadratic polynomial fit to determine an updated SLO threshold (§§ 110, 111; Fig. 7), whereas in an alternative method the SLO threshold and component performance metric threshold (γ) divide application metric/component performance metric data into quadrants for determining the component performance metric threshold (γ) that maximizes the number of data points in true negative event and true positive event quadrants (§§ 112, 113; Fig. 8). Moreover, the Examiner does not explain how those

figures would have led one of ordinary skill in the art to the Appellants' claimed invention.

*Rejections over Breitgand in view of Cohen and
over Breitgand in view of Cohen and Kolsrud*

We need address only the independent claims (8 and 15).¹

Cohen uses a recurrent problem determination module (132) to identify recurrent signature cluster problems indicated by performance thresholds, such as SLO thresholds, being exceeded (§§ 15, 50, 65, 66; Fig. 2).²

The Examiner finds that Breitgand's figure 8's lower left quadrant 104's data points (which are within both the SLO and γ thresholds and indicate true negative events) and upper right quadrant 106's data points (which are outside both the SLO and γ thresholds and indicate true positive events) are past both thresholds (below the SLO threshold and to the left of the γ threshold or above the SLO threshold and to the right of the γ threshold) and that one of ordinary skill in the art, upon determining that the value of a performance metric for the current sampling period passes a first threshold derived from a first model of expected behavior of the performance metric, would have evaluated the value of the performance metric according to a second model of expected behavior of the performance

¹ The Examiner does not rely upon Kolsrud for any disclosure that remedies the deficiency in the references applied to the independent claims as to the limitations in those claims (Final Act. 19).

² A signature is a representation of a state of a computer resource and is identified when the computer resource is having a problem (§ 14). "[T]he database of signatures is clustered to find clusters of signatures that characterize different performance problems and normal operation regimes" (§ 18).

metric to ensure that true positive, true negative, false positive and false negative events are properly identified without logic errors (Final Act. 15–17; Ans. 9–15).

The Examiner does not explain, and it is not apparent, how Breitgand’s figure 8 would have led one of ordinary skill in the art to evaluate a performance metric using first and second models as proposed by the Examiner.

Thus, the Examiner has not set forth a factual basis which is sufficient to support a conclusion of obviousness of the Appellants’ claimed invention. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (“A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art”). Accordingly, we reverse the rejections under 35 U.S.C. § 103.

New ground of rejection

Under 37 C.F.R. § 41.50(b) we enter the following new ground of rejection.

Claim 8 is rejected under 35 U.S.C. § 101 as failing to claim patent-eligible subject matter.

The Supreme Court stated in *Bilski v. Kappos*, 561 U.S. 593, 601 (2010) that “[t]he Court’s precedents provide three specific exceptions to § 101’s broad patent-eligibility principles: ‘laws of nature, physical phenomena, and abstract ideas.’ [*Diamond v. Chakrabarty*, 447 U.S. 303,] 309, 100 S. Ct. 2204 [(1980)].” The Court further stated that limiting an abstract idea to a particular technological environment does not make the concept patentable. *See Bilski*, 561 U.S. at 610–611. Determining whether a claimed invention is patent-eligible subject matter requires determining

whether the claim is directed toward a patent-ineligible concept and, if so, determining whether the claim's elements, considered both individually and as an ordered combination, transform the nature of the claim into a patent-eligible application. *See Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2350 (2014).

The Appellants' claim 8 is directed toward an abstract idea, i.e., upon determining that a performance metric passes a first threshold derived from a first model of expected performance metric behavior, determining whether the performance metric passes a threshold derived from a second model of expected performance metric behavior and, if so, generating an alert message. The claim is limited to a computer-readable medium storing an application for execution using a computer processor, but "simply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle." *Alice*, 134 S. Ct. at 2357–58 (quoting *Mayo Collaborative Services v. Prometheus Labs.*, 566 U.S. 66, 84 (2012)) (citing *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Also, "insignificant post-solution activity [generating an alert message] will not transform an unpatentable principle into a patentable process." *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981). Thus, the claim's elements, considered both individually and as an ordered combination, do not transform the nature of the claim into a patent-eligible application.

We leave it to the Examiner to address the other claims.

DECISION/ORDER

The provisional nonstatutory obviousness-type double patenting rejections of claims 8–14 over claims 1–7 of copending Application

No. 13/686,389, and claims 15–21 over claims 1–7 of copending Application No. 13/686,389 in view of Breitgand are affirmed. The rejections under 35 U.S.C. § 103 of claims 8 and 15 over Breitgand in view of McGee, claims 8–10, 12–15, 17 and 19–21 over Breitgand in view of Cohen, and claims 11 and 18 over Breitgand in view of Cohen and Kolsrud are reversed. Under 37 C.F.R. § 41.50(b) a new ground of rejection of claim 8 has been entered.

It is ordered that the Examiner's decision is affirmed.

In addition to affirming the examiner's rejection(s) of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 41.50(b) which provides that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 CFR § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. . . .

(2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED; 37 C.F.R. § 41.50(b)